



Overview and rationale:

In this topic inspired by the work of John McAdam's invention, children will build on the skills that they developed in EYFS in Shape, Space and Measure and Expressive Arts and Design. They will be introduced to the properties of materials, which they delve deeper into in Y2. They will get to explore why we choose different materials for making and building the things around them, just like John McAdam did when inventing tarmac! The children are encouraged to think about what things are made of and why these materials have been chosen. Skills of scientific enquiry will be developed and they will be introduced to vocabulary to describe the properties of materials. They will also get creative in construction, discussing why properties of different materials are best for best for different purposes.

Can we build it? Tarmacadam can!

CHEMISTRY



SCIENCE LEARNING STATEMENTS

Area of Learning	Skills and Knowledge
Scientific Enquiry and applying knowledge in context	I can explore the world around me and raise my own simple questions.
	I can experience different types of science enquiries, including experiments.
	I can begin to recognise ways in which to answer scientific questions.
	I can carry out simple tests.
	I can use simple features to compare objects, minerals, materials and living things. With help, I can decide how to sort and group.
	I can ask people questions and use simple secondary resources.
	I can observe closely using simple equipment to help and, with help, I can observe changes over time.
	With guidance, I can begin to notice patterns and relationships.
	I can use simple measurements and equipment to gather data.
	I can record simple data.
I can use my observations and ideas to suggest answers to questions. I can talk about what I found out and how I found it out.	
With help, I can record and communicate my findings in a range of ways and begin to use scientific language.	

SCIENCE VOCABULARY

Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through, solid, liquid, gas, temperature, freezing, boiling, John McAdam, tarmac, Charles MacIntosh

SCIENCE NATIONAL CURRICULUM OBJECTIVES

1. distinguish between an object and the material from which it is made
2. identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
3. describe the simple physical properties of a variety of everyday materials
4. compare and group together a variety of everyday materials on the basis of their simple physical properties

ART AND DESIGN

Exploring and Developing

Exploring and developing ideas	Explore ideas from first hand observation, experience and imagination.
Evaluating and developing work	Review what they and others have done and say what they think and feel about it.

3D Form

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
-Experiment with, construct and join recycled, natural and man-made materials. -Explore shape and form.	-Use the appropriate amount of glue for a medium -Describes textures of materials	-Know how to cut, roll and coil materials -Know that patterns can be incorporated into their product. -Know that texture can be used for effect. -Know that clay dries out and becomes harder to manipulate, so needs to be kept damp. -Know how to make an imprinted piece of art by rolling, rubbing, stamping -Know how to create and arrange shapes appropriately. -Know how to make models using balls of paper, tubes and masking tape, using tissue paper to cover. -Know how to slot card together.	Cut, roll, coil, patterns, texture, texture words to describe, clay, dry, imprint, roll, rub, stamp, shapes, arrange, models, structures, sculpture, slot, cut, damp

Artist/Style/Activities

Antony Gormley: Clay sculptures to recreate 'Field'

'CORE' KNOWLEDGE	'ADDITIONAL' KNOWLEDGE	School Value	Topic relevance: How/when/where/why is it needed?	Possible 'higher order' questioning			
1) I can identify what different objects are made from; wood, plastic, glass, metal, fabric, rubber	a) I can list objects that are made from plastic...and why they might be made from plastic.	Resilience	How do buildings show resilience?	Remember	What different materials do you know?		
	b) I can list objects that are made from metal...and why.			Understand	Why do we use different materials for different purposes? Can you give any examples?		
	c) I can list objects that are made from glass...and why it is useful to be transparent.			Apply	Why is it useful that some materials are transparent?		
2) I can describe the properties of materials - e.g. hard, soft, rough, smooth, transparent, opaque, waterproof	a) I can group objects based on their properties	Respect	How can we show respect buildings and materials, including those here at UPS?	Analyse	If you were to build a house, what would you build it from and why?		
	b) I know why windows need to be transparent.			Evaluate	Can you explain what happened in the story of the three little Pigs and why?		
	c) I know why lots of doors are opaque.			Create	Can you build a out of these materials?		
3) I know that John McAdam invented tarmac and George Macintosh invented the raincoat.	a) I know what objects are waterproof and why that is useful.	Responsibility	Who is responsible for looking after our school?	Possible Enrichment activities (including trips/visitors, etc)			
	b) I know what objects are absorbent...and why.					Kindness	Scientists are always looking at ways to make life better for others. Can you think of any inventions that have made life better for others? What do we do to make others' lives better through kindness?
	c) I know why tarmac is used for making roads.						
				Now Press Play experience			
				Materials Hunt / Pilsworth Recycling plant trip			

MUSIC

Controlling sounds through Singing

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Pupils should be taught to use their voices expressively and creatively by singing songs and speaking chants and rhymes - Learn that they can make different types of sounds with their voices 	<ul style="list-style-type: none"> - Take part in a group singing performance. - Learn about voices, singing notes of different pitches (high low) - Identify long, short for duration, loud and quiet for dynamics - Learn to start and stop singing when following a leader. 	<ul style="list-style-type: none"> - Know 4 songs or raps by heart (across the KS, not within this unit alone) and sing them in unison with others - Know how to perform with an awareness of others - Know that their voices make different sounds and that the sounds can be made into patterns 	High, low, pitch, beat, pulse, rhythm, long, short, duration, loud, quiet, soft

Controlling sounds by Playing (and Performing)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Play un-tuned instruments - Listen to and follow musical instructions from a leader. 	<ul style="list-style-type: none"> - Use instruments to perform and choose sounds to represent different things. - Treat instruments carefully and with respect. - Make and control long and short sounds (duration) 	<ul style="list-style-type: none"> - Learn the names of the instruments they are playing. 	Instrument names, un-tuned, leader, long, short, duration, perform, improve, feedback

Creating and developing musical ideas (Improvisation and Composing)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Experiment with, create, select and combine sounds using the inter-related dimensions of music. - Clap and repeat short melodic and rhythmic patterns. 	<ul style="list-style-type: none"> - Create a sequence of long and short sounds with help (duration). - Clap longer rhythms with help. - Make different sounds 	<ul style="list-style-type: none"> - Know that composing is like writing a story with music. - Know that everyone can compose. 	Repeat, rhythm, improvise, compose, long, short, duration, tone, loud and quiet – dynamics; fast and slow – tempo

Responding and reviewing (Appraising)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Listen with concentration and understanding to a range of high-quality live and recorded music - Say whether they like or dislike a piece of music. 	<ul style="list-style-type: none"> - Learn how they can enjoy moving to pulse in music by dancing, marching e.g., bouncing balls - Hear, listen, and respond to moods in music. 	<ul style="list-style-type: none"> - Know and recognise the sound and names of some of the instruments they use. 	Describe, because, names of instruments composer, musicians, low notes, high notes, higher, lower, slowly, faster, repeats, hear

Listening and applying knowledge and understanding (Theory)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Develop a love of music and talent as a musician. - Choose a song they have learnt and perform it. 	<ul style="list-style-type: none"> - Add their own ideas to a performance. - Record the performance and say how they were feeling about it. - Make sounds with a slight difference, with help. - Use voice in different ways to create different effects. 	<ul style="list-style-type: none"> - Know that a performance is sharing music with other people, called an audience. - Know that music has a steady pulse, like a heartbeat. 	Audience, pulse, rhythms, describe, because, names of instruments, composer, musicians, low notes, high notes, higher, lower, slowly, faster.

Stimulus - Composers/Musicians/Artists/Styles

‘The King is in His Castle’

Genre of the half term - Rock and Roll